Tech Note 1021

Accessing DASABCIP and PLC Statistics for ControlLogix Processors

Topic#: 002854
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Introduction

DASABCIP provides many system items that allow access to DAServer status and diagnostic information. This information can be useful when diagnosing and troubleshooting issues or monitoring general communication statistics.

This *Tech Note* provides a sample object with ArchestrA graphics attached that will access various system items. This *Tech Note* will also explain these system items.

Note: This *Tech Note* assumes basic knowledge of DASABCIP, Wonderware System Platform and InTouch.

Application Versions

- DASABCIP 5.0
- Wonderware System Platform 2012
- InTouch 2012

Note: The aaPKG file provided with this *Tech Note* was created using 2012 but also imports and works on 2014.

System Items (General PLC Information)

Graphic Title (Figure 1)	**Item Name**	**Type**	**Access**	**Description**	**Values**
PLC Type	SYSPLCType	String	Read Only	Name of the processor type	Descriptive Text
Processor Name	SYSProcessorName	String	Read Only	Name of the program running in the processor	Descriptive Text
Firmware	SYSRevision	String	Read Only	Processor firmware version	Descriptive Text
Device Status	SYSDeviceStatus	String	Read Only	Status of the processor	OK or Faulted

Mode	SYSMode	String	Read Only	Current mode of the processor	Run, Program, Remote Run, Remote Program
Device Security	SYSDeviceSecurity	Boolean	Read Only	Status of the controller security	True, False
Tag DB Status	SYSTagDBStatus	String	Read Only	The status of the tag database	Uninitialized, Uploading, Uploaded, Error
Tag DB Version	SYSTagDBVersion	String	Read Only	The version of the tag database	<Major version>.<Minor Version>
Update Tag Info	SYSUpdateTagInfo	Boolean	Read/Write	Forces an update of the entire controller tag database	True, False

System Items (Memory Statistics)

Graphic Title (Figure 1)	**Item Name**	**Type**	**Access**	**Description**	**Values**
Total Processor	SYSTotalMem	DWord	Read Only	Returns the total memory, in number of bytes for the processor	0...2147483647
Total Data Table	SYSTotalMemDT	DWord	Read Only	Returns the total data table memory, in number of bytes for the processor	0...2147483647
Total General	SYSTotalMemGM	DWord	Read Only	Returns the total general memory, in number of bytes for the processor (1756-L55M16 only)	0...2147483647
Total I/O	SYSTotalMemIO	DWord	Read Only	Returns the total I/O memory, in number of bytes for the processor	0...2147483647
Free Processor	SYSFreeMem	DWord	Read Only	Returns the unused memory, in number of bytes for the processor	0...2147483647
Free Data Table	SYSFreeMemDT	DWord	Read Only	Returns the unused data table memory, in number of bytes for the processor	0...2147483647
Free General	SYSFreeMemGM	DWord	Read Only	Returns the unused general memory, in number of bytes for the processor (1756-L55M16 only)	0...2147483647
Free I/O	SYSFreeMemIO	DWord	Read Only	Returns the unused I/O memory, in number of bytes for the processor	0...2147483647

System Items (Communication Statistics)

Graphic Title (Figure 1)	**Item Name**	**Type**	**Access**	**Description**	**Values**
Status	SYSStatus	Boolean	Read Only	Status indication of the connection stete to the device	True, False
Update Interval	SYSUpdateInterval	DWord	Read/Write	The currently set update interval in milliseconds.	0..2147483647
Max Interval	SYSMaxInterval	DWord	Read Only	The currently measured update interval in milliseconds of all items in the device group.	0..2147483647
Message Optimization	SYSOptimization	Boolean	Read Only	Status of the ControlLogix message optimization	True, False
UDT Optimization	SYSUDTOptimization	Boolean	Read Only	Status of the ControlLogix user-defined data type optimization	True, False
ItemCount Total	SYSItemCount	DWord	Read Only	Number of items in the device group	0..2147483647
ItemCount Active	SYSActiveItemCount	DWord	Read Only	Number of active items in the device group	0..2147483647
ItemCount Errors	SYSErrorCount	DWord	Read Only	Number of active items in the device group that have errors	0..2147483647
Connections Open	SYSOpenConnections	DWord	Read Only	Number of open CIP connections	0..2147483647
Connections Initiated	SYSConnectionsInitiated	DWord	Read Only	Number of CIP connections initiated by the server	0..2147483647
Connections Refused	SYSConnectionsRefused	DWord	Read Only	Number of CIP connections refused by the communications module	0..2147483647
Requests Sent	SYSRequestSent	DWord	Read Only	Number of message requests sent	0..2147483647
Reply Received	SYSReplyReceived	DWord	Read Only	Number of replies received	0..2147483647
Request Errors	SYSRequestErrors	DWord	Read Only	Number of errors for the requests sent	0..2147483647
Request Timeout	SYSRequestTimeout	DWord	Read Only	Number of requests timed out	0..2147483647
Unsol Received	SYSUnsolReceived	DWord	Read Only	Number of unsolicited messages received	0..2147483647

Unsol Replied	SYSUnsolreplied	DWord	Read Only	Number of replies sent in response to unsolicited messages	0..2147483647
Item Reads / Sec	SYSItemUpdateRate	DWord	Read Only	Number of read items received per second (Valid when update rate is 1 second or less)	0..2147483647
Item Writes / Sec	SYSItemWriteRate	DWord	Read Only	Number of write items sent out per second	0..2147483647

Sample Object

The sample object is a UserDefined object. This object contains several Field attributes for DASABCIP system items with a data type of integer or boolean making it easy for the user to enable history and alarms. All DASABCIP String system items are defined as UDAs. This sample object assumes that is will be used with a DDE/SuiteLink Client object pointing to an ABCIP DAServer.

Note: The sample object was created using Wonderware System Platform 2012.

Download and Extract $PLCStatus_CIP.zip.

1. To import the sample **$PLCStatus_CIP** object, open the ArchestrA IDE then select **Galaxy / Import / Object(s)** from the main menu.
2. Select the extracted **$PLCStatus_CIP.aaPKG** file that was downloaded above.
3. Create an instance of the **$PLCStatus_CIP** object.

You must supply data for the following UDAs:

- **DIObject:** Type the name of the DDESuiteLink client object that connects to DASABCIP
- **DeviceGroup:** Type the name of the Device Group defined in the DDESuitelink Client object that connects to DASABCIP.

After this information is provided and the object is deployed, a script will populate all necessary Input and Output sources with the proper system items.

After creating and deploying an instance of **$PLCStatus_CIP**, you can use the ArchestrA graphics in an InTouch application (see the InTouch HMI and ArchestrA Integration Guide for information on using ArchestrA Symbols in WindowMaker).

An ArchestrA graphic object is included with the sample object.

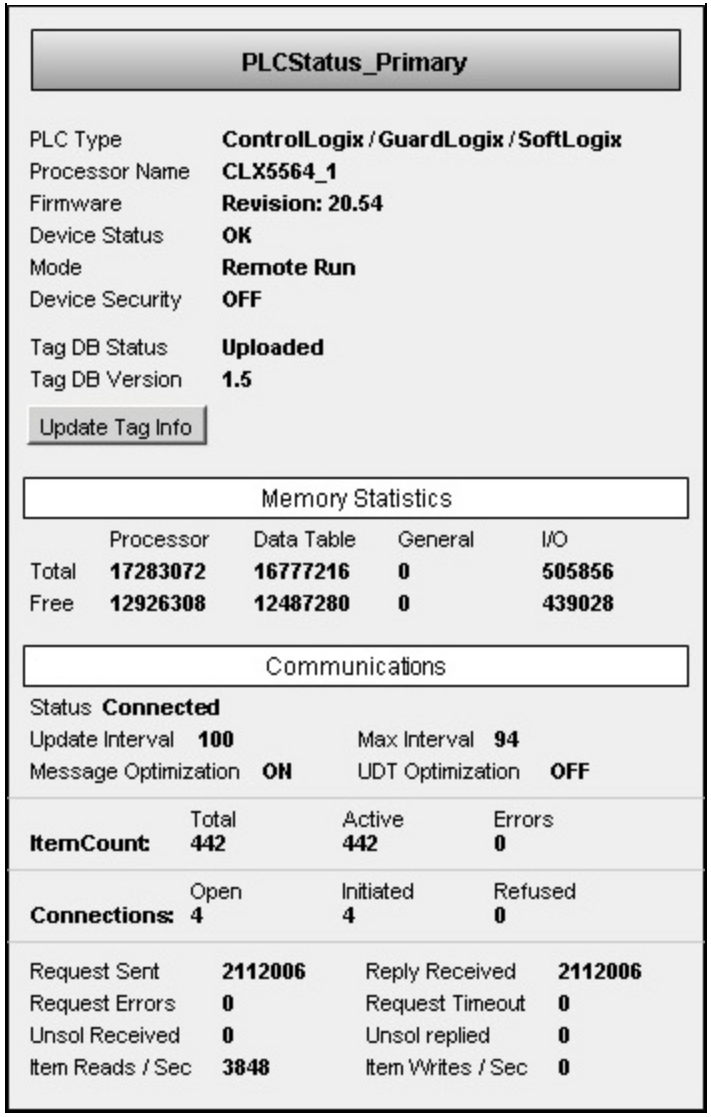

FIGURE 1: ARCHESTRA GRAPHIC UI

There is one button on this graphic object that can write back to DASABCIP. Use this with caution:

- **Update Tag Info**: Pressing this button will cause DASABCIP to re-read the entire ControlLogix tag database. Updating a tag database comsumes resources. During the updating process, the DAServer may be held up from updating the client application.

Statistics can be reset by writing a **True** to **SYSResetStatistics** through a device group defined at the PORT_CIP level in DASABCIP. This functionality is not included in the sample object but can be easily implemented by creating a **Device Group** under the **Port_CIP** object in DASABCIP. You can then write a **True** to **SYSResetStatistics** through this device group.

Note: Writing a **True** to **SYSResetStatistics** will reset statistic counters of all child nodes under the **PORT_CIP** object.

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